

Detailed Data Tables: Women at Risk

Recent changes to the presentation of Massachusetts HIV/AIDS surveillance data

Effective January 1, 2011, the Massachusetts Department of Public Health (MDPH), Bureau of Infectious Diseases, HIV/AIDS fact sheets, epidemiologic reports and other HIV data presentations have been updated to remove all HIV/AIDS cases who were first diagnosed in another state before being reported in Massachusetts. As of January 1, 2012, this resulted in the removal of 2,924 HIV/AIDS cases, of which 808 have died and 2,116 were living. These persons living with HIV/AIDS may still continue to reside and receive care in the Commonwealth. The total number of persons living with HIV/AIDS, irrespective of location of diagnosis, is the basis for MDPH service planning. This change is partially a result of increased activities required by the Centers for Disease Control and Prevention (CDC) for de-duplication among states in an effort to identify cases that are counted multiple times in the National HIV/AIDS surveillance system. The cases are assigned to the state that reports the earliest date of AIDS diagnosis if available. If the case has not progressed to AIDS, the case is assigned to the state with the earliest HIV diagnosis date. Please note that all previous HIV/AIDS fact sheets, data reports and presentations include cases that may have been first diagnosed in another state.

Also effective January 1, 2011, the Massachusetts Department of Public Health (MDPH) HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to eliminate the presumed heterosexual exposure mode category for males; those cases have been reassigned to the no identified risk (NIR) exposure mode category. The presumed heterosexual exposure mode category was used with the intention of identifying HIV exposure mode for females when sex with males is the only reported risk factor, there is no evidence of current or past injection drug use (IDU), and behavioral risk and HIV status information about male sexual partners are unknown. Twenty-nine percent of females living with HIV/AIDS and 40% of recent female HIV diagnoses are reported in the presumed heterosexual exposure mode category. The application of the presumed heterosexual exposure mode category to males is overly inclusive in that female to male HIV transmission is biologically less probable, and there are alternate exposure modes that are possible for males, including sex with other men (MSM) or IDU. The CDC reports males diagnosed with HIV/AIDS who report sex with females as their only risk factor, without corresponding partner risk or HIV status information, in the NIR exposure mode category. This revision to report presumed heterosexual male HIV/AIDS cases as NIR will bring Massachusetts HIV/AIDS case reporting for males in alignment with CDC standards. The MDPH will maintain presumed heterosexual and heterosexual exposure mode categories for females.

Table 1. People diagnosed with HIV infection by gender: Massachusetts¹, 2008–2010²

| Gender: | N | % |
|--------------|--------------|-------------|
| Male | 1,453 | 73% |
| Female | 541 | 27% |
| Total | 1,994 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/12

Table 2. People living with HIV/AIDS on December 31, 2011 by gender: Massachusetts¹

| | HIV/AIDS | |
|--------------|---------------|-------------|
| Gender: | N | % |
| Male | 12,917 | 71% |
| Female | 5,253 | 29% |
| Total | 18,170 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/12

Table 3. People diagnosed with HIV infection by Health Service Region (HSR)¹ and gender: Massachusetts², 2008–2010³

| Health Service Region: | Male | | Female | | Total |
|------------------------|--------------|------------|------------|------------|--------------|
| | N | % | N | % | N |
| Boston HSR | 434 | 76% | 136 | 24% | 570 |
| Central HSR | 104 | 60% | 68 | 40% | 172 |
| Metro West HSR | 250 | 76% | 80 | 24% | 330 |
| Northeast HSR | 242 | 69% | 109 | 31% | 351 |
| Southeast HSR | 209 | 73% | 79 | 27% | 288 |
| Western HSR | 152 | 72% | 58 | 28% | 210 |
| Prisons ⁴ | 62 | 85% | 11 | 15% | 73 |
| Mass. Total | 1,453 | 73% | 541 | 27% | 1,994 |

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at <http://www.mass.gov/eohhs/docs/dph/aids/2006-profiles/app-hrs-maps.pdf> for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999

⁴ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility. These data do not reflect current incarceration status. Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Table 4. People living with HIV/AIDS on December 31, 2011 by Health Service Region (HSR)¹ and gender: Massachusetts²

| Health Service Region | Male | | Female | | Total |
|--|---------------|------------|--------------|------------|---------------|
| | N | % | N | % | N |
| Boston HSR | 4,363 | 76% | 1,360 | 24% | 5,723 |
| Central HSR | 982 | 62% | 613 | 38% | 1,595 |
| Metro West HSR | 1,832 | 72% | 726 | 28% | 2,558 |
| Northeast HSR | 1,877 | 66% | 953 | 34% | 2,830 |
| Southeast HSR | 1,770 | 71% | 732 | 29% | 2,502 |
| Western HSR | 1,264 | 63% | 744 | 37% | 2,008 |
| Prison ³ | 829 | 87% | 124 | 13% | 953 |
| Massachusetts Total⁴ | 12,917 | 71% | 5,253 | 29% | 18,170 |

¹ Reflects the health service region of a person's residence at the time of report (not necessarily current residence). See Epidemiologic Profile General Appendices, Health Service Region Maps, available at <http://www.mass.gov/eohhs/docs/dph/aids/2006-profiles/app-hrs-maps.pdf> for configuration of health service regions.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ HSRs are regions defined geographically to facilitate targeted health service planning. While prisons do not constitute an HSR, the prison population is presented separately in this analysis because of its unique service planning needs. Prisons include only persons who were diagnosed with HIV/AIDS while in a correctional facility. These data do not reflect current incarceration status.

⁴ Mass. total includes one person living with HIV/AIDS with unknown residence at time of report.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Table 5. Ten cities/towns¹ in Massachusetts² with the highest proportion of women among HIV infection diagnoses (HIV Dx): 2008–2010³

| Rank | City/Town | Number of HIV Dx among women | Percent of Total HIV Dx |
|------|-------------|------------------------------|-------------------------|
| 1 | Brockton | 31 | 49.2% |
| 2 | Worcester | 43 | 44.3% |
| 3 | Lawrence | 22 | 43.1% |
| 4 | Malden | 13 | 38.2% |
| 5 | Waltham | 14 | 37.8% |
| 6 | Lowell | 21 | 35.6% |
| 7 | Holyoke | 11 | 35.5% |
| 8 | New Bedford | 11 | 32.4% |
| 9 | Lynn | 13 | 31.0% |
| 10 | Springfield | 30 | 30.9% |

¹ Among cities/towns with over 20 reported HIV infection diagnoses in the years 2008–2010. Note: reflects the city/town of a person's residence at the time of report (not necessarily current residence). People diagnosed while at a correctional facility are not included.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999. Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/12

Table 6. People diagnosed with HIV infection by gender and race/ethnicity: Massachusetts¹, 2008–2010²

| Race/Ethnicity: | Male | | Female | |
|---------------------|--------------|-------------|------------|-------------|
| | N | % | N | % |
| White, non-Hispanic | 671 | 46% | 97 | 18% |
| Black, non-Hispanic | 375 | 26% | 284 | 52% |
| Hispanic/Latino | 352 | 24% | 148 | 27% |
| Other/Unknown | 55 | 4% | 12 | 3% |
| Total | 1,453 | 100% | 541 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/12

Table 7. People living with HIV/AIDS on December 31, 2011 by gender and race/ethnicity: Massachusetts¹

| Race/Ethnicity: | Male | | Female | |
|------------------------|---------------|-------------|--------------|-------------|
| | N | % | N | % |
| White, non-Hispanic | 6,595 | 51% | 1,371 | 26% |
| Black, non-Hispanic | 3,059 | 24% | 2,323 | 44% |
| Hispanic/Latino | 2,992 | 23% | 1,468 | 28% |
| Asian/Pacific Islander | 222 | 2% | 65 | 1% |
| Other/Unknown | 49 | <1% | 26 | <1% |
| Total | 12,917 | 100% | 5,253 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Explanation of age adjusted rates

A “rate” of a disease per 100,000 population is a useful way to compare groups that have substantially different population sizes rather than relying on the raw number of cases. For example, the number of people living with HIV/AIDS on December 31, 2011 who are Hispanic/Latino, is 4,341 whereas the number of people living with HIV/AIDS who are white (non-Hispanic) is 7,810. Although the *number* of people living with HIV/AIDS who are Hispanic/Latino in Massachusetts is smaller than the number of people living with HIV/AIDS who are white (non-Hispanic), we also need to consider that there are far fewer people of Hispanic/Latino heritage living in Massachusetts than white (non-Hispanic) individuals. Hispanic/Latino individuals represent 8% of the Massachusetts population compared to white (non-Hispanic) individuals who represent 81% of the population¹. If HIV/AIDS had the same impact on the Hispanic/Latino population of the state as on the white (non-Hispanic), then there should be over 10 times as many cases in white (non-Hispanic) individuals, but there are less than twice as many. By calculating a rate which takes into consideration the differences in the population size, it is evident that the number of people living with HIV/AIDS for every 100,000 Hispanic/Latino individuals in Massachusetts is much higher than the rate for every 100,000 white (non-Hispanic) individuals. This is called a “crude rate” and is calculated by dividing the number of people living with HIV/AIDS by the population of interest (the total number of Hispanic/Latino individuals in Massachusetts, for example) and multiplying by 100,000. (See example 1.A below).

¹ The denominators for prevalence calculations are based on year 2005 population estimates from the MDPH Bureau of Health Statistics, Research and Evaluation

Example 1.A: Calculation of crude HIV/AIDS prevalence rate for white (non-Hispanic) individuals, Massachusetts (152.7 per 100,000)

$$\begin{aligned}
 \text{Crude HIV/AIDS prevalence rate for white (non-Hispanic) individuals} &= (\text{number of white (non-Hispanic) individuals living with HIV/AIDS} \div \text{population size of white (non-Hispanic) individuals}) \times 100,000 \\
 &= (7,966 / 5,215,472) \times 100,000 \\
 &= (.0015273785) \times 100,000 \\
 &= \mathbf{152.7}
 \end{aligned}$$

However, sometimes, in addition to the population size being different, the age composition of the populations is different. In Massachusetts, black (non-Hispanic) and Hispanic/Latino populations are generally younger than white (non-Hispanic). The median age of black (non-Hispanic) people (29.7 years) and Hispanic/Latino people (24.5 years) is younger than that of white (non-Hispanic) people (38.8 years). Therefore, it is necessary to “age-adjust” the HIV/AIDS prevalence rate to get a true comparison of the impact of the disease across racial/ethnic groups without an effect from the differences in age composition. Age-adjustment of rates minimizes the distortion created by differences in age composition.

Age-adjusted rates are calculated by weighting the age-specific rates for a given population by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined. (See example 1.B below).

Example 1.B: Calculation of age-adjusted HIV/AIDS prevalence rate for white (non-Hispanic) individuals, Massachusetts (136.9 per 100,000)

| <i>A</i> | <i>B</i> | <i>C</i> | <i>D</i> | <i>E</i> |
|-----------------------------|--------------------------------------|--------------------------|---|---|
| <i>Age group (in years)</i> | <i># of prevalent HIV/AIDS cases</i> | <i>Population (2005)</i> | <i>2000 US standard population weight</i> | <i>Age-adjusted rate ((B÷CxD)×100,000))</i> |
| <1 | 0 | 57,670 | 0.013818 | 0.0 |
| 1-4 | 0 | 230,681 | 0.055317 | 0.0 |
| 5-14 | 7 | 614,485 | 0.145565 | 0.2 |
| 15-24 | 111 | 646,026 | 0.138646 | 2.4 |
| 25-34 | 538 | 636,970 | 0.135573 | 11.5 |
| 35-44 | 1,569 | 823,238 | 0.162613 | 31.0 |
| 45-54 | 3,580 | 818,844 | 0.134834 | 58.9 |
| 55-64 | 1,739 | 601,053 | 0.087247 | 25.2 |
| 65-74 | 362 | 352,672 | 0.066037 | 6.8 |
| 75-84 | 58 | 299,510 | 0.044842 | 0.9 |
| 85+ years | 2 | 134,323 | 0.015508 | 0.0 |
| Total | 7,966 | 5,215,472 | 1.000000 | 136.9 |

To see the effect of age-distribution on prevalence rates see Tables 8 and 9 below for a comparison of crude and age-adjusted rates by race/ethnicity.

Table 8. Crude and age-adjusted rates of diagnosis of HIV infection per 100,000 population¹ by race/ethnicity and gender: Average annual rate 2008–2010², Massachusetts³

| State total: | Crude rate per 100,000 | Age-adjusted rate per 100,000 |
|--|-----------------------------------|--|
| White (non-Hispanic) | 4.9 | 4.8 |
| Black (non-Hispanic) | 56.5 | 57.7 |
| Hispanic/Latino | 32.9 | 35.0 |
| Asian/Pacific Islander | 6.5 | 5.7 |
| American Indian/Alaskan Native | 9.1 | 8.3 |
| Total rate | 10.3 | 10.1 |
| Males: | Crude rate per 100,000 | Age-adjusted rate per 100,000 |
| White (non-Hispanic) Males | 8.9 | 8.6 |
| Black (non-Hispanic) Males | 66.3 | 68.1 |
| Hispanic/Latino Males | 46.4 | 49.8 |
| Asian/Pacific Islander Males | 11.1 | 9.8 |
| American Indian/Alaskan Native Males | 18.4 | 16.7 |
| Total rate among males | 15.5 | 15.0 |
| Females: | Crude rate per 100,000 | Age-adjusted rate per 100,000 |
| White (non-Hispanic) Females | 1.2 | 1.2 |
| Black (non-Hispanic) Females | 47.3 | 48.0 |
| Hispanic/Latina Females | 19.5 | 21.0 |
| Asian/Pacific Islander Females | 2.1 | 1.7 |
| American Indian/Alaskan Native Females | 0.0 | 0.0 |
| Total rate among females | 5.4 | 5.4 |

¹ The denominators are from the Massachusetts Department of Public Health Modified Age, Race/Ethnicity, & Sex Estimates 2005; all rates are age-adjusted using the 2000 US standard population.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 1/1/12

Table 9. Crude and age-adjusted HIV/AIDS prevalence per 100,000 population¹ on December 31, 2011 by race/ethnicity and gender: Massachusetts²

| State Total: | Crude rate per 100,000 | Age-adjusted rate per 100,000 |
|--|-----------------------------------|--|
| White, non-Hispanic | 152.7 | 136.9 |
| Black, non-Hispanic | 1,384.6 | 1,512.2 |
| Hispanic/Latino | 881.2 | 1,162.0 |
| Asian/Pacific Islander | 92.0 | 96.2 |
| American Indian/Alaskan Native | 509.3 | 146.6 |
| Total prevalence | 282.3 | 265.5 |
| Males: | Crude rate per 100,000 | Age-adjusted rate per 100,000 |
| White, non-Hispanic males | 261.8 | 232.5 |
| Black, non-Hispanic males | 1,622.4 | 1,853.4 |
| Hispanic/Latino males | 1,183.3 | 1,665.3 |
| Asian/Pacific Islander males | 144.8 | 152.5 |
| American Indian/Alaskan Native males | 676.5 | 205.3 |
| Total prevalence among males | 413.9 | 387.3 |
| Females: | Crude rate per 100,000 | Age-adjusted rate per 100,000 |
| White, non-Hispanic females | 50.8 | 46.9 |
| Black, non-Hispanic females | 1,160.5 | 1,226.1 |
| Hispanic/Latina females | 579.6 | 718.9 |
| Asian/Pacific Islander females | 41.0 | 42.2 |
| American Indian/Alaskan Native females | 347.5 | 88.3 |
| Total prevalence among females | 158.4 | 151.5 |
| ¹ The denominators for prevalence calculations are based on year 2005 population estimates from the MDPH Bureau of Health Statistics, Research and Evaluation. | | |
| ² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts. | | |
| Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 1/1/12 | | |

Table 10. People diagnosed with HIV infection within the years 2008–2010¹ by gender and place of birth: Massachusetts²

| Race/Ethnicity: | Male | | Female | |
|--|--------------|-------------|------------|-------------|
| | N | % | N | % |
| United States (US) | 989 | 68% | 219 | 40% |
| Puerto Rico/US Dependency ³ | 109 | 8% | 61 | 11% |
| Non-US | 355 | 24% | 261 | 48% |
| Total | 1,453 | 100% | 541 | 100% |

¹ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Ninety-nine percent of people diagnosed with HIV infection from 2008–2010 who were born in a US dependency were born in Puerto Rico, <1% were born in the US Virgin Islands and <1% were born in Guam.

Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/12

Table 11. People living with HIV/AIDS on December 31, 2011 by gender and place of birth: Massachusetts¹

| Place of Birth: | Male | | Female | |
|--|---------------|-------------|--------------|-------------|
| | N | % | N | % |
| United States (US) | 9,166 | 71% | 2,841 | 54% |
| Puerto Rico/US Dependency ² | 1,308 | 10% | 681 | 13% |
| Non-US | 2,443 | 19% | 1,731 | 33% |
| Total | 12,917 | 100% | 5,253 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Ninety-six percent of people living with HIV/AIDS who were born in a US Dependency were born in Puerto Rico, <1% were born in the US Virgin Islands, and 3% were born in an unknown dependency.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), Data as of 1/1/12

Table 12. *Females* diagnosed with HIV infection by place of birth and year of diagnosis: Massachusetts¹ 2001–2010²

| | US | | Puerto Rico/ US Dependency ³ | | Non-US | | Total |
|------|-----|-----|--|-----|--------|-----|------------|
| | N | % | N | % | N | % | |
| 2001 | 154 | 52% | 34 | 11% | 111 | 37% | 299 |
| 2002 | 157 | 46% | 36 | 11% | 149 | 44% | 342 |
| 2003 | 130 | 43% | 42 | 14% | 130 | 43% | 302 |
| 2004 | 112 | 41% | 35 | 13% | 124 | 46% | 271 |
| 2005 | 100 | 43% | 24 | 10% | 107 | 46% | 231 |
| 2006 | 104 | 48% | 17 | 8% | 96 | 44% | 217 |
| 2007 | 96 | 47% | 19 | 9% | 88 | 43% | 203 |
| 2008 | 75 | 40% | 25 | 13% | 86 | 46% | 186 |
| 2009 | 68 | 41% | 20 | 12% | 76 | 46% | 164 |
| 2010 | 76 | 40% | 16 | 8% | 99 | 52% | 191 |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available 10 year period after the implementation of HIV infection reporting in 1999.

³ Ninety-eight percent of all people diagnosed with HIV infection in MA who were born in a US dependency were born in Puerto Rico, 1% were born in the US Virgin Islands, <1% were born in American Samoa, <1% were born in Guam and 1% were born in an unknown dependency.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Table 13. People diagnosed with HIV infection by gender and exposure mode: Massachusetts¹, 2008–2010²

| Exposure Mode: | Male | | Female | |
|--|--------------|-------------|------------|-------------|
| | N | % | N | % |
| Male-to-male sex (MSM) | 789 | 54% | N/A | N/A |
| Injection drug use (IDU) | 122 | 8% | 65 | 12% |
| MSM/IDU | 56 | 4% | N/A | N/A |
| Heterosexual sex | 77 | 5% | 174 | 32% |
| Other | 12 | 1% | 7 | 1% |
| Total undetermined/other | 397 | 27% | 295 | 55% |
| • Presumed Heterosexual Sex ² | N/A | N/A | 219 | 40% |
| • Undetermined ³ | 397 | 27% | 76 | 14% |
| Total | 1,453 | 100% | 541 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

³ Includes female sex with male of unknown HIV status or risk. This category is limited to females.

⁴ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

N/A = Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Note: The category of “presumed heterosexual” is used in Massachusetts to re-assign females who are reported with an exposure of heterosexual sex, but only with a partner of unknown HIV status or behavioral risk. Massachusetts uses the category of presumed heterosexual to distinguish these female cases from other undetermined cases about which we know less. Prior to January 1, 2011, the presumed heterosexual category was also used to report HIV data in males. The rationale for the application of the presumed heterosexual exposure mode category to females only has been addressed in the MDPH OHA report “Intersecting Risks: HIV Infection among Heterosexual Women and Men in Massachusetts.” (2010)

http://www.mass.gov/Eeohhs2/docs/dph/aids/intersecting_risks.pdf . Nationally, the Centers for Disease Control and Prevention categorize “presumed heterosexual” cases as “no identified risk” (NIR). As such, comparisons of the presumed heterosexual category cannot be made to national data. Caution should be used in interpreting data for presumed heterosexual, as it is still not clear what the exposure risk was for females in this category. Although a person may not report other risk behaviors, such as injection drug use to a health care provider, it does not exclude the possibility that an individual has experienced these other risks. There are many barriers to disclosing HIV risk behaviors in the health care setting such as a limited patient-provider relationship or stigma.

Table 14. People living with HIV/AIDS on December 31, 2011 by gender and exposure mode: Massachusetts¹

| Exposure Mode: | Male | | Female | |
|--|---------------|-------------|--------------|-------------|
| | N | % | N | % |
| Male-to-male sex (MSM) | 6,498 | 50% | N/A | N/A |
| Injection drug use (IDU) | 2,562 | 20% | 1,301 | 25% |
| MSM/IDU | 605 | 5% | N/A | N/A |
| Heterosexual sex | 769 | 6% | 1,844 | 35% |
| Other | 231 | 2% | 189 | 4% |
| Total undetermined/other | 2,252 | 17% | 1,919 | 37% |
| • Presumed heterosexual sex ² | N/A | N/A | 1,520 | 29% |
| • Undetermined ³ | 2,252 | 17% | 399 | 8% |
| Total | 12,917 | 100% | 5,253 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Includes female sex with male of unknown HIV status or risk. This category is limited to females.

³ Includes male sex with female of unknown HIV status or risk, those still being followed up for risk information, those who have died with no determined risk, and those lost to follow-up.

N/A=Not Applicable

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Table 15. Females diagnosed with HIV infection by race/ethnicity¹ and exposure mode: Massachusetts², 2008–2010³

| Exposure Mode: | White NH | | Black NH | | Hispanic/Latina | |
|--|-----------|-------------|-----------------|-----------------|-----------------|-----------------|
| | N | % | N | % | N | % |
| Injection drug use | 31 | 32% | 9 | 3% | 25 | 17% |
| Heterosexual sex | 30 | 31% | 86 | 30% | 56 | 38% |
| Other | 0 | 0% | -- ⁶ | -- ⁶ | -- ⁶ | -- ⁶ |
| Total undetermined/other | 36 | 37% | 186 | 65% | 64 | 43% |
| • Presumed heterosexual sex ⁴ | 21 | 22% | 142 | 50% | 50 | 34% |
| • Undetermined ⁵ | 15 | 15% | -- ⁶ | -- ⁶ | -- ⁶ | -- ⁶ |
| Total | 97 | 100% | 284 | 100% | 148 | 100% |

¹ Data for Asian/Pacific Islander, American Indian/Alaska Native and Other/Unknown race/ethnicity are not presented due to small numbers.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

⁴ Includes female sex with male of unknown HIV status or risk. This category is limited to females.

⁵ Includes those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up.

⁶ Numbers less than 5 for populations of less than 50,000 are suppressed for the assurance of confidentiality.

NH = Non-Hispanic, API = Asian/Pacific Islander

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Table 16. Females living with HIV/AIDS on December 31, 2011 by race/ethnicity¹ and exposure mode: Massachusetts²

| Exposure Mode: | White NH | | Black NH | | Hispanic/ Latina | | API | |
|-----------------------------|--------------|-------------|--------------|-------------|---------------------|-------------|-----------------|-----------------|
| | N | % | N | % | N | % | N | % |
| Injection drug use | 613 | 45% | 296 | 13% | 385 | 26% | -- ⁵ | -- ⁵ |
| Heterosexual sex | 414 | 30% | 767 | 33% | 632 | 43% | 20 | 31% |
| Other | 49 | 4% | 78 | 3% | 57 | 4% | -- ⁵ | -- ⁵ |
| Total undetermined/other | 295 | 22% | 1,182 | 51% | 394 | 27% | 38 | 58% |
| • Pres. HTSX ³ | 221 | 16% | 970 | 42% | 300 | 20% | 22 | 34% |
| • Undetermined ⁴ | 74 | 5% | 212 | 9% | 94 | 6% | 16 | 25% |
| Total | 1,371 | 100% | 2,323 | 100% | 1,468 | 100% | 65 | 100% |

¹ Data for American Indian/Alaska Native and Other/Unknown race/ethnicity are not presented due to small numbers.

² Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

³ Includes female sex with male of unknown HIV status or risk. This category is limited to females.

⁴ Includes those still being followed up for risk information, those who have died with no determined risk and those lost to follow-up, and those with confirmed occupational exposure.

⁵ Percentages calculated from a numerator of less than 5 and a denominator of less than 100 are not presented.

NH = Non-Hispanic, API = Asian/Pacific Islander, Pres. HTSX = Presumed Heterosexual Sex

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding), data as of 1/1/12

Table 17. People diagnosed with HIV infection by gender and age at HIV diagnosis: Massachusetts¹, 2008–2010²

| Age (years): | Males | | Females | |
|--------------|--------------|-------------|------------|-------------|
| | N | % | N | % |
| Under 13 | 10 | 1% | 5 | 1% |
| 13 to 19 | 31 | 2% | 14 | 3% |
| 20 to 24 | 134 | 9% | 36 | 7% |
| 25 to 29 | 170 | 12% | 55 | 10% |
| 30 to 34 | 174 | 12% | 83 | 15% |
| 35 to 39 | 182 | 13% | 80 | 15% |
| 40 to 44 | 227 | 16% | 76 | 14% |
| 45 to 49 | 244 | 17% | 65 | 12% |
| 50 to 54 | 145 | 10% | 56 | 10% |
| 55 to 59 | 69 | 5% | 40 | 7% |
| 60+ | 67 | 5% | 31 | 6% |
| Total | 1,453 | 100% | 541 | 100% |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

² Reflects year of HIV infection diagnosis among all individuals reported with HIV infection, with or without an AIDS diagnosis for the most recently available three-year period after the implementation of HIV infection reporting in 1999.

Data Source: MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/12

Technical Notes:

Tables 18 includes data reported by Massachusetts residents through anonymous telephone interviews from 2009 to 2010. This ongoing random-digit-dial telephone survey, the Behavioral Risk Factor Surveillance System (BRFSS), covers a broad range of topic areas (including risk related to sexual activity) and is part of a CDC-funded national survey program.

| Table 18. Number of sexual partners in the past year¹, female BRFSS respondents ages 18–64 Massachusetts, 2009–2010 | | | | |
|--|-------------------|------------------|--------------------|----------------------|
| | 0 Partners | 1 Partner | 2+ Partners | N² |
| Total Females | 18.4% | 78.2% | 3.4% | 3,757 |
| | | | | |
| Age in Years: | 0 Partners | 1 Partner | 2+ Partners | N |
| 18–24 | 29.0% | 58.3% | 12.7% | 133 |
| 25–34 | 9.5% | 86.0% | 4.5% | 477 |
| 35–44 | 7.6% | 90.3% | 2.1% | 852 |
| 45–64 | 26.8% | 72.1% | 1.2% | 2,246 |
| | | | | |
| Race/Ethnicity³: | 0 Partners | 1 Partner | 2+ Partners | N |
| White, non-Hispanic | 17.1% | 79.4% | 3.5% | 2,925 |
| Black, non-Hispanic | 23.0% | 72.3% | 4.7% | 233 |
| Hispanic | 27.0% | 69.8% | 3.2% | 439 |
| | | | | |
| Sex of Partner⁴: | 0 Partners | 1 Partner | 2+ Partners | N |
| Same sex | Not Applicable | 94.8% | 5.2% | 76 |
| Opposite sex | Not Applicable | 96.2% | 3.8% | 2,576 |
| | | | | |
| ¹ “Number of sexual partners in past year” is a state-added question administered to a sub-sample of BRFSS respondents and represents the number of people a respondent reports having sex with. Sex was defined by the interviewer as including oral, vaginal, or anal sex. ² Only respondents with known values are included in this table. Column sub-totals may not equal overall total due to missing values. ³ Data for Asian respondents is not presented due to small numbers. ⁴ Only asked of adults reporting sex (including oral, vaginal, or anal sex) in the past year Data source: Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), 2009–2010 | | | | |

Technical Notes:

Tables 19–21 include data reported by students in randomly selected Massachusetts public high schools every odd year from 1993 to 2011. This anonymous survey, the Youth Risk Behavior Survey (YRBS), is administered by the Massachusetts Department of Elementary and Secondary Education in collaboration with the Centers for Disease Control and Prevention and focuses on risk behaviors that may affect the health and/or safety of high school students.

| Table 19. Sexual behavior as reported among female respondents to the Youth Risk Behavior Survey: Massachusetts, 2011 | | |
|--|--|--|
| By Behavior: | Percent of total responding yes to specified question | N¹ (total number of respondents for each question) |
| Ever had sexual intercourse | 39.4% | 1,281 |
| Sexual intercourse before age 13 | 2.1% | 1,281 |
| 4 or more lifetime sexual intercourse partners | 9.5% | 1,284 |
| Sexual intercourse in last 3 months | 30.3% | 1,284 |
| Condom used at last intercourse ² | 51.0% | 387 |
| Alcohol/drugs used at last intercourse ² | 16.7% | 388 |
| Ever been, gotten someone pregnant | 4.8% | 1,340 |
| Ever had sexual contact against their will | 13.5% | 1,333 |
| ¹ The number of respondents for each question varies because some survey participants do not provide an answer | | |
| ² Among females reporting sexual intercourse in the past three months | | |
| Data Source: Massachusetts Department of Elementary and Secondary Education | | |

Table 20. Massachusetts Youth Risk Behavior Survey respondents reporting condom use at last sexual intercourse by year and gender: Massachusetts, 1993–2011¹

| Year | Males | | Females | | Total | |
|------|-------|----------------------|---------|----------------------|-------|----------------------|
| | % | Total N ² | % | Total N ² | % | Total N ² |
| 1993 | 57.4% | 409 | 46.7% | 462 | 51.8% | 872 |
| 1995 | 59.9% | 623 | 52.0% | 626 | 55.9% | 1,253 |
| 1997 | 64.2% | 517 | 50.4% | 559 | 57.0% | 1,079 |
| 1999 | 62.6% | 589 | 52.0% | 639 | 57.2% | 1,237 |
| 2001 | 61.6% | 553 | 54.9% | 582 | 58.1% | 1,139 |
| 2003 | 60.3% | 424 | 57.4% | 496 | 57.4% | 922 |
| 2005 | 71.6% | 442 | 59.2% | 542 | 65.0% | 986 |
| 2007 | 63.2% | 422 | 59.2% | 505 | 61.1% | 929 |
| 2009 | 65.7% | 409 | 50.6% | 437 | 57.5% | 849 |
| 2011 | 64.5% | 373 | 51.0% | 387 | 57.7% | 761 |

¹ A random sample of high schools is selected for participation each year; data presented do not represent cohorts followed over time

² Total N = total number of respondents by sex (unweighted). The number of respondents for each question varies from year to year

Data Source: Massachusetts Department of Elementary and Secondary Education

Table 21. Massachusetts Youth Risk Behavior Survey respondents reporting sexual intercourse (ever) by year and gender: Massachusetts, 1993–2011¹

| Year | Males | | Females | | Total | |
|------|-------|----------------------|---------|----------------------|-------|----------------------|
| | % | Total N ² | % | Total N ² | % | Total N ² |
| 1993 | 51.4% | 1,326 | 46.0% | 1,435 | 48.7% | 2,763 |
| 1995 | 50.3% | 1,870 | 42.8% | 1,930 | 46.5% | 3,806 |
| 1997 | 46.8% | 1,800 | 42.4% | 1,858 | 44.7% | 3,664 |
| 1999 | 46.4% | 1,922 | 41.8% | 2,017 | 44.1% | 3,954 |
| 2001 | 46.3% | 1,886 | 42.3% | 1,892 | 44.3% | 3,786 |
| 2003 | 40.8% | 1,581 | 41.1% | 1,676 | 41.0% | 3,261 |
| 2005 | 47.9% | 1,512 | 42.9% | 1,669 | 45.4% | 3,185 |
| 2007 | 45.2% | 1,344 | 43.7% | 1,495 | 44.4% | 2,844 |
| 2009 | 48.0% | 1,225 | 44.6% | 1,251 | 46.4% | 2,480 |
| 2011 | 44.7% | 1,228 | 39.4% | 1,281 | 42.0% | 2,513 |

¹ A random sample of high schools is selected for participation each year; data presented do not represent cohorts followed over time

² Total N = total number of respondents by sex (unweighted). The number of respondents for each question varies from year to year

Data Source: Massachusetts Department of Elementary and Secondary Education

Table 22. Total reported AIDS cases by gender and year of diagnosis: Massachusetts¹, selected years, 1985–2010

| Year of diagnosis: | Male | | Female | | Total |
|--------------------|-------|-----|--------|-----|-------|
| | N | % | N | % | |
| 1985 | 202 | 90% | 23 | 10% | 225 |
| 1990 | 859 | 82% | 191 | 18% | 1,050 |
| 1995 | 1,002 | 76% | 324 | 24% | 1,326 |
| 2001 | 472 | 68% | 226 | 32% | 698 |
| 2002 | 468 | 69% | 213 | 31% | 681 |
| 2003 | 397 | 66% | 201 | 34% | 598 |
| 2004 | 461 | 69% | 207 | 31% | 668 |
| 2005 | 471 | 72% | 184 | 28% | 655 |
| 2006 | 446 | 70% | 187 | 30% | 633 |
| 2007 | 353 | 67% | 175 | 33% | 528 |
| 2008 | 299 | 71% | 120 | 29% | 419 |
| 2009 | 298 | 70% | 129 | 30% | 427 |
| 2010 | 272 | 69% | 122 | 31% | 394 |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/12

Table 23. Deaths among persons reported with AIDS by gender and year of death: Massachusetts¹, selected years, 1985–2010

| Year of death | Male | | Female | | Total |
|---------------|------|-----|--------|-----|-------|
| | N | % | N | % | N |
| 1985 | 106 | 90% | 12 | 10% | 118 |
| 1990 | 543 | 88% | 74 | 12% | 617 |
| 1995 | 903 | 80% | 230 | 20% | 1,133 |
| 2001 | 253 | 71% | 103 | 29% | 356 |
| 2002 | 222 | 71% | 89 | 29% | 311 |
| 2003 | 219 | 68% | 102 | 32% | 321 |
| 2004 | 221 | 74% | 77 | 26% | 298 |
| 2005 | 190 | 70% | 80 | 30% | 270 |
| 2006 | 199 | 72% | 77 | 28% | 276 |
| 2007 | 170 | 71% | 68 | 29% | 238 |
| 2008 | 155 | 71% | 62 | 29% | 217 |
| 2009 | 143 | 66% | 73 | 34% | 216 |
| 2010 | 130 | 70% | 57 | 30% | 187 |

¹ Effective, January 1, 2011 the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

Data Source MDPH HIV/AIDS Surveillance Program (percentages may not add up to 100% due to rounding); Data as of 1/1/12